harman/kardon
STEREO INTEGRATED
AMPLIFIER

PM645

owner's manual
mode d'emploi
Bedienungsanleitung
manuale di istruzioni
Bruksanvisning
gebruiksaanwijzing

SPECIFICATIONS

Congratulations on your purchase of the Harman Kardon PM645 Stereo Integrated Amplifier.

In order to appreciate the full performance of this sophisticated unit, please be sure to read this owner's manual and use your integrated amplifier only in accordance with its instructions. Keep it in a safe place for future reference.

Power Output, RMS (both channels driven into 8 Ohms, 20—20,000Hz)	: 40 watts per channel @ less than 0.09% THD
(DIN, 4 Ohms, 1kHz)	: 70 watts per channel
HCC (high instantaneous current capability)	: 35A
Power Bandwidth (at half rated output into 8 Ohms)	: 10Hz to 100,000Hz
Frequency Response (+0, −3dB)	: 0.5Hz to 150,000Hz
Damping Factor	: >65
Signal-to-Noise Ratio, IHF-A WTD (reference 1W output)	
Phono	: 80dB
Video/CD, Tuner, Tape	: 81dB
Input Sensitivity/Impedance	
Phono	: 2.2mV/47k Ohms and 125pF
Video/CD, Tuner, Tape	: 135mV/22k Ohms
Phono Overload, MM	: 130mV
Tone Control Characteristics	
Bass Boost/Cut (at 50Hz)	: +10dB/−10dB
Treble Boost/Cut (at 10kHz)	: +10dB/−10dB
Filters	
Subsonic	: 15Hz, 6dB/Octave
High Cut	: 6kHz, 6dB/Octave
Bass Contour	
Boost (at 50Hz)	: +10dB
Phase Shift (300—20,000Hz)	: <5°
Dimensions (W x H x D)	: 17-1/2" x 4-1/16" x 13-7/8" (443 x 103 x 351 mm)
Weight	: 14lbs.5oz. (6.5kg)
Power Supply	
General model	: AC 220/240V, 50/60Hz
Canada model	: AC 120V, 60Hz
Power Consumption	
General model	: 160W
Canada model	: 220W (270VA)

All specifications and features subject to change without notice.

FOR CUSTOMERS IN THE UK

Your unit is supplied with the flex which will have either two or three wires, so the following items should be observed to guarantee safety:

THREE CORE FLEX

WARNING: THIS APPARATUS MUST BE EARTHED.
IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow	: Earth
Blue	: Neutral
Brown	: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

TWO CORE FLEX

IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

Blue	: Neutral
Brown	: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

FOR CUSTOMERS IN CANADA

The AC plug is a polarized plug, so the following item should be taken into consideration:

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

This manual applies to champagne gold and black versions with this model PM645.

■HCC (High-instantaneous Current Capability)

Recent studies have shown that while reproducing dynamic music signals the instantaneous impedances of nearly all loud-speakers drop to less than one third of the nominal ratings. These low instantaneous impedances typically require 3 to 6 times more current than an 8 Ohm resistive load. Reduced dynamic range and increased distortion will result if the amplifier cannot provide these higher currents. For this reason, the PM645 was designed to provide 35 amperes of instantaneous current.

■Ultrawide Bandwidth

The bandwidth of this unit is exceptionally wide and independent of negative feedback. This improves transient accuracy and phase linearity.

■Low Negative Feedback

This unit has been designed to have low distortion and wide bandwidth without high negative feedback. This further improves its dynamic accuracy.

■Discrete Component Circuitry

In order to achieve the above goals, all discrete electronic circuitry has been employed. All available integrated circuits could not provide this high level of performance.

■Sophisticated Electronic Protection

Harman Kardon engineers developed a unique protection system that permits high instantaneous current to be driven into speaker systems but protects the amplifier from short-circuited or damaged speakers and wires. This protection system in no way limits amplifier output voltage or current during music reproduction, and therefore has no negative effect on sound quality.

■Bass Contour

Bass contour is an exclusive Harman Kardon feature which provides two major benefits: it can equalize and restore the low frequency response of small loud-speakers, and it can be used in place of conventional loudness contour. But unlike conventional bass boost circuits, Harman Kardon's bass contour also includes a phase correction circuit that maintains clear, natural sound.

Always Use the Correct AC Voltage

Always connect the power cord to a domestic mains outlet. Never connect the unit to an outlet supplying a higher voltage. This may create a fire hazard.

NOTE FOR CUSTOMERS OTHER THAN CANADA
This unit is supplied with a voltage selector enabling selection between 220V and 240V on the rear panel. If the selector is not set to the local voltage, set the selector to the correct voltage with a screwdriver before connecting the power cord to a mains outlet.

Handle the Power Cord Gently

●Do not disconnect the plug from the AC outlet by pulling the cord; always pull the plug itself. Pulling the cord may break the wire.
●If you do not intend to use your unit for any considerable length of time, disconnect the plug from the AC outlet.
●Do not place furniture or other heavy objects on the cord, and avoid dropping heavy objects on it. Also do not make a knot in the power cord. Not only may the cord be damaged, it can also cause a short circuit and a consequent fire hazard.

English

Place of Installation

Place your unit on a firm and level surface. Avoid installing your unit under the following conditions:
▶Moist or humid places.
▶Places exposed to direct sunlight or close to heating equipment.
▶Extremely cold locations such as those in the direct draft from an air conditioner.
▶Places subject to excessive vibration or dust.
▶Poorly ventilated places.

Do not cover the ventilation slots on the top of the unit. This will cause the temperature inside the unit to rise, which can eventually effect the reliability of your unit.

Moving the Unit

Before moving the unit, be sure to unplug the power cord from the AC outlet and disconnect the interconnection cords to other units.

Do Not Open the Cabinet

To prevent fire or shock hazard, do not tamper with internal components for inspection or maintenance. Harman Kardon does not guarantee against performance degradation resulting from any modification.

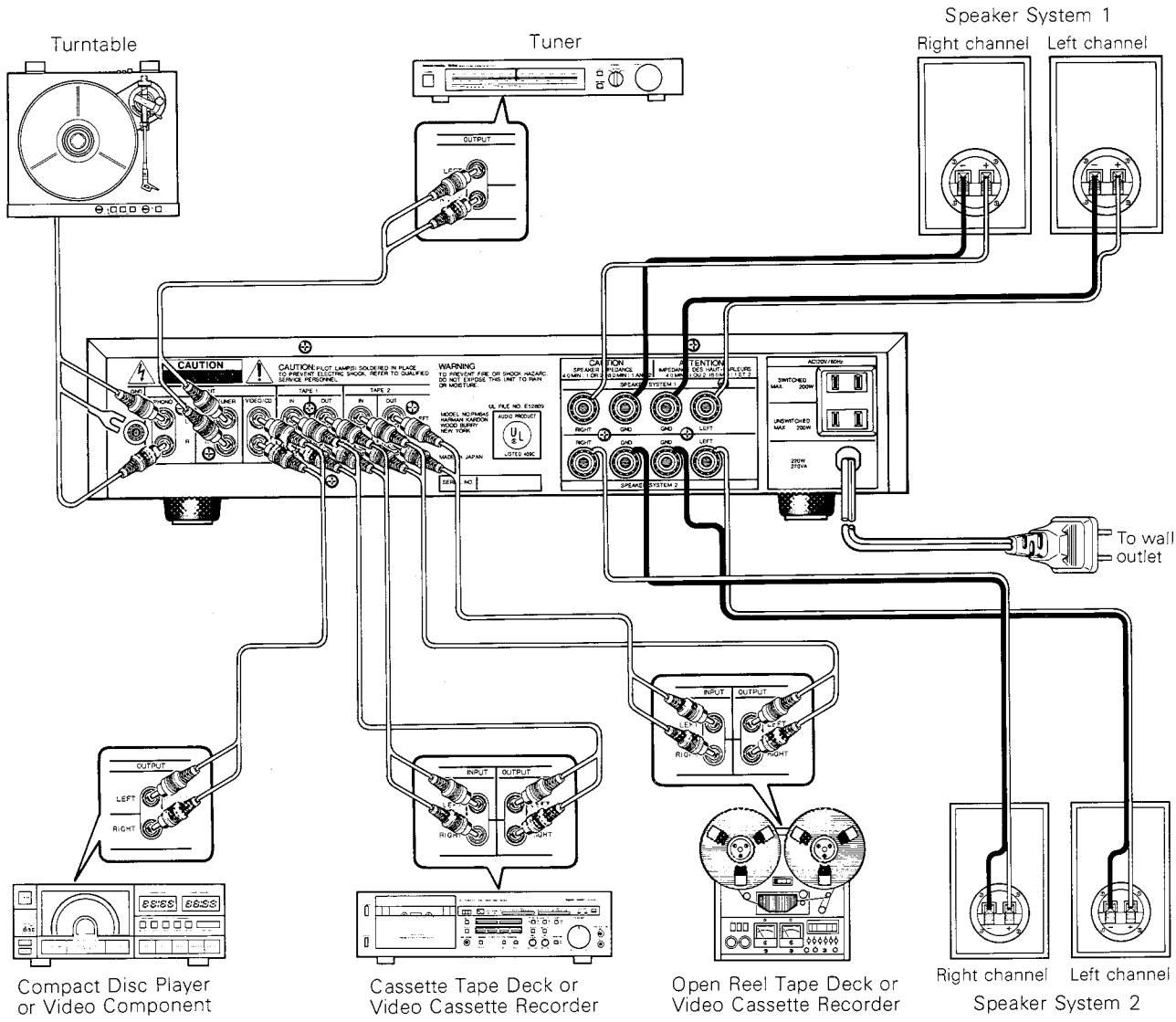
If water, a hairpin or wire accidentally enters the unit, immediately unplug the power cord from the AC outlet to prevent shock and consult an authorized Harman Kardon service station. If you use the unit under this condition, it may cause a fire or shock hazard.

Cleaning

When the unit gets dirty, wipe it with a soft dry cloth. If necessary, wipe it with a soft cloth dampened with mild soapy water and then wipe with a dry cloth.

Never use benzine, thinner, alcohol or other volatile agent, and avoid spraying an insecticide near the unit.

CONNECTIONS



Connecting Other Components

Carefully connect the plugs to the left and right channel jacks. Push the plugs in all the way. Poor setting of the plugs tends to cause hum or intermittent sound and may damage the speakers.

NOTE: While you are connecting this unit to the rest of your high fidelity system, please unplug the power cord, disconnecting not only this unit but all the components, from the AC outlet.

Do not interwind the connection wires with the power cord. If interwound, the sound quality may be degraded.

The AC convenience receptacles on the rear panel have a capacity of 200 watts and can be used for tuner, turntable or tape decks. Read the manual or labels on the component to check its power consumption before connecting it to this unit.
SWITCHED: The power to this receptacle is turned on and off by this unit's power switch.
UNSWITCHED: The power to this receptacle is independent of this unit's power switch.

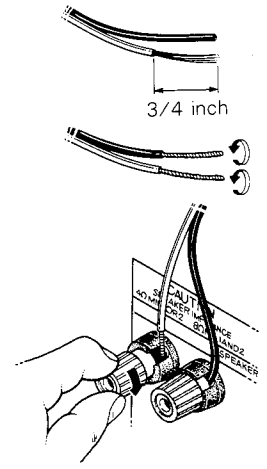
NOTE: In some countries, these AC convenience receptacles are not available.

Connecting Speakers

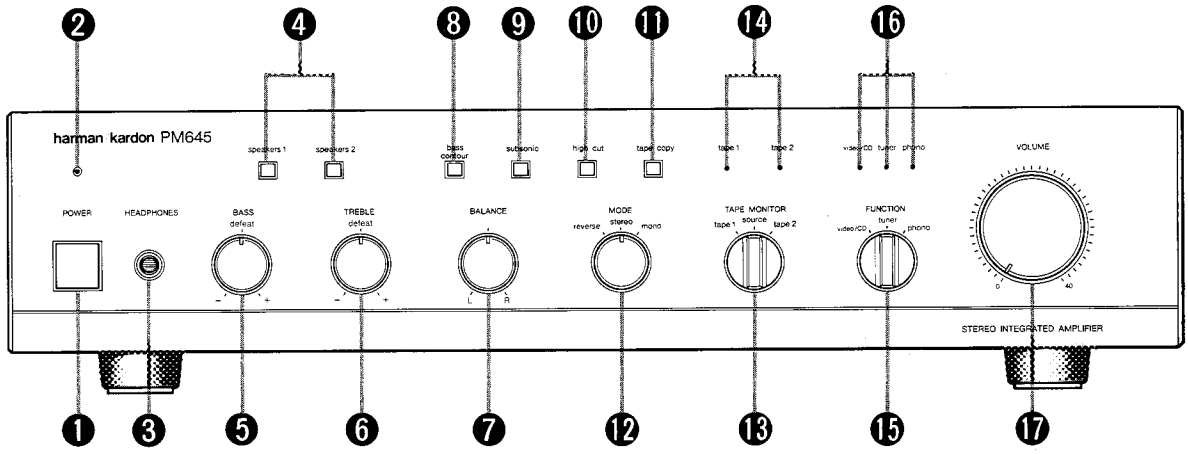
Connect the speaker wires carefully to the speaker terminals on the rear panel so as not to mistake the left and the right channels or reverse the speaker polarities (+ and —).

Use sufficiently thick wire (18 gauge for short lengths, 16-12 gauge for longer lengths). It is recommended to use color-coded wire for easy polarity identification. Speaker wires should be as short as possible, and the left and the right channel wires should be the same length.

1. Remove about 3/4 inch (20 mm) of insulation from the end of each wire and twist the strands of each end.
2. After making sure of the correct channel and polarity, loosen the SPEAKER SYSTEM terminal knob and insert the conductor straight into the recess at the upper-right of the terminal. Tighten the terminal knob, and the end of speaker wire is wound automatically.



CAUTION: Two speaker systems can be connected to this unit. The minimum speaker impedance should be 4 Ohm when only one speaker system is connected. When two speaker systems are connected, care should be taken that net impedance does not become less than 4 Ohm.



❶ POWER SWITCH (POWER)
Pressing this switch will turn on the power and the POWER indicator lights up. Press the switch again to turn the power off.

❷ POWER INDICATOR
When the POWER switch is pressed, the POWER indicator lights up in red.

❸ HEADPHONE JACK (HEADPHONES)
Stereo headphones with a standard 1/4 inch plug can be connected to this jack. When both SPEAKERS 1 and 2 switches are in the OFF position (buttons out), sound can still be obtained via the headphone jack.

❹ SPEAKER SWITCHES (speakers 1, speakers 2)
One or two speaker systems can be connected to this unit. Depress the SPEAKERS 1 or 2 switch corresponding to the system to which you want to listen. To use both speaker systems, depress both switches. Press down the switches once again if the use of the speaker systems are not desired.

❺ BASS CONTROL KNOB (BASS)
This knob controls the low frequency sound level. Turn it clockwise to boost or counterclockwise to reduce the low frequency sound level. In the middle position (defeat), the frequency characteristic is flat.

❻ TREBLE CONTROL KNOB (TREBLE)
This knob controls the high frequency sound level. Turn it clockwise to boost or counterclockwise to reduce the high frequency sound level. In the middle position (defeat), the frequency characteristic is flat.

❼ BALANCE CONTROL KNOB (BALANCE)
This knob is used to balance the left and the right channels. Usually, it is set at the center. Turn it to the left or right to balance the sound if it seems unbalanced from the speakers or the headphones.

❽ BASS CONTOUR SWITCH (bass contour)
This switch activates a unique low frequency equalization circuit that provides full, natural sound from small speakers that are normally deficient in the bass region. It can also be used in place of conventional loudness compensation.

❾ SUBSONIC FILTER SWITCH (subsonic)
When playing the turntable, this filter switch is used to cut off super-low tones, which may excessively vibrate the speaker cones.

❿ HIGH CUT FILTER SWITCH (high cut)
This switch is pressed to cut off high frequency noise such as disc scratches or tape hiss.

⓫ TAPE COPY SWITCH (tape copy)
When two tape decks are connected to the PM645, this switch enables recording from tape deck 1 to tape deck 2 (tape dubbing).

⓬ MODE SELECTOR (MODE)
This selector is used to reverse or combine the left and right channel signals.

reverse: This position reverses the left and right channels to create an opposite stereo image.
stereo : This is the proper position for normal use.
mono : This position mixes the left and right channel signal.

⓭ TAPE MONITOR SELECTOR (TAPE MONITOR)
This selector is used when listening to a tape or monitoring the sound during recording. The TAPE MONITOR indicator (tape 1 or tape 2) lights up in red corresponding to the selector position.

tape 1 : Select this position to play a tape or to monitor the sound during recording on the tape deck connected to the TAPE 1 jacks.
source: Select this position to listen to a program source other than a tape.
tape 2 : Select this position to play a tape or to monitor the sound during recording on the tape deck connected to the TAPE 2 jacks.

NOTE: The TAPE 1 and/or TAPE 2 jacks on the rear panel can also be used to record and playback audio signals with video cassette recorder(s).
The VIDEO/CD INPUT jacks can be used to play audio signals from a video disc player or video cassette recorder.

⓮ TAPE MONITOR INDICATORS (tape 1, tape 2)
These indicators illuminate when the TAPE MONITOR selector is switched to "tape 1" or "tape 2".

⓯ FUNCTION SELECTOR (FUNCTION)
This selector is used to select a program source other than a tape.

video/CD: Select this position to listen to the sound from the video component, the compact disc player or other component connected to the VIDEO/CD INPUT jacks.
tuner : Select this position to listen to an FM or AM broadcast from the stereo tuner connected to the TUNER INPUT jacks.
phono : Select this position to listen to a disc played on the turntable connected to the PHONO INPUT jacks.

⓰ FUNCTION INDICATORS (video/CD, tuner, phono)
Each FUNCTION indicator illuminates in red corresponding to the setting of the FUNCTION selector.

⓱ VOLUME CONTROL KNOB (VOLUME)
This knob controls the sound level. Turning clockwise increases the sound volume, and turning counterclockwise decreases it. Set this knob at a minimum level before turning the power on or changing the sound source to protect the speakers from being damaged by a sudden high level sound.

Listening to a Record (Disc)

1. Turn the VOLUME control knob to the minimum level and press the POWER switch. The POWER indicator lights up.
2. Press the SPEAKERS 1 switch or/and SPEAKERS 2 switch for the desired speaker system(s).
3. Set the FUNCTION selector to the "phono" position and the FUNCTION indicator "phono" lights up.
4. Set the TAPE MONITOR selector to the "source" position.
5. Activate your turntable and place the stylus on the record (disc).
6. Turn the VOLUME control knob clockwise to increase the sound volume to the desired level.
7. If the disc has a large warp, press the SUBSONIC filter switch.
8. Adjust the BASS and TREBLE control knobs to obtain the desired tone.
9. Activate the BALANCE control knob, MODE selector, BASS CONTOUR, or HIGH CUT filter switch if necessary.

NOTE: If you hear a hum at average listening levels, turn the POWER switch off and check to see that the phono and the ground connections are secure. Depending on the cartridge type used, less hum may be created without the ground connection.

Listening to Broadcasts

1. Turn the VOLUME control knob to the minimum level and press the POWER switch. The POWER indicator lights up.
2. Press the SPEAKERS 1 switch or/and SPEAKERS 2 switch for the desired speaker system(s).
3. Set the FUNCTION selector to the "tuner" position and the FUNCTION indicator "tuner" lights up.
4. Set the TAPE MONITOR selector to the "source" position.
5. Set the MODE selector to the "stereo" position.
6. Activate the tuner and tune to broadcast frequency.
7. When the monaural broadcast is received, set the MODE selector to the "mono" position.
8. When the desired station is selected, advance the VOLUME control knob to a comfortable level and adjust the BASS and TREBLE control knobs as desired.
9. Activate the BALANCE control knob or BASS CONTOUR switch if necessary.

Listening to the Video/CD Input Source

To listen to a video component, compact disc player or other component:

1. Turn the VOLUME control knob to the minimum level and press the POWER switch. The POWER indicator lights up.
2. Press the SPEAKERS 1 switch or/and SPEAKERS 2 switch for the desired speaker system(s).
3. Set the FUNCTION selector to the "video/CD" position and the FUNCTION indicator "video/CD" lights up.
4. Set the TAPE MONITOR selector to the "source" position.
5. Activate the component connected to the VIDEO/CD INPUT jacks.
6. Advance the VOLUME control knob to a comfortable level and adjust the BASS and TREBLE control knobs as desired.
7. Activate the BALANCE control knob, MODE selector, or BASS CONTOUR switch if necessary.

Tape Recording

Recording from a program source (FM/AM broadcast, turntable or a component connected to VIDEO/CD INPUT jacks) on a tape deck connected to the TAPE 1 and/or TAPE 2 jacks:

1. Turn the VOLUME control knob to the minimum level and press the POWER switch. The POWER indicator lights up.
2. Press the SPEAKERS 1 switch or/and SPEAKERS 2 switch for the desired speaker system(s).
3. Select the desired program source with the FUNCTION selector. The FUNCTION indicator lights up to indicate the program source selected.
4. Set the TAPE COPY switch to the OFF position (button out).
5. Set the TAPE MONITOR selector to the "source" position.
6. Advance the VOLUME control knob to a comfortable level.
7. Set the MODE selector at the "stereo" or "mono" position according to the program source.
8. Start recording by activating the tape deck(s) connected to TAPE 1 and/or TAPE 2 jacks. The source sound can be listened to from the speakers or headphone.
9. To monitor the sound being recorded, set the TAPE MONITOR selector to the "tape 1" or "tape 2" position according to the tape deck being recorded. The corresponding "tape 1" or "tape 2" TAPE MONITOR indicator lights up, indicating the monitoring state.

NOTE: Recording onto the tape deck is carried out directly from the program source without being influenced by the volume, balance, bass and treble controls, bass contour, subsonic and high cut filter switches of this unit.

Tape Playback

Listening to a tape:

1. Turn the VOLUME control knob to the minimum level and press the POWER switch. The POWER indicator lights up.
2. Press the SPEAKERS 1 switch or/and SPEAKERS 2 switch for the desired speaker system(s).
3. Set the TAPE COPY switch to the OFF position (button out).
4. Set the TAPE MONITOR selector to the "tape 1" or "tape 2" position corresponding to the tape deck to be played. Confirm that the "tape 1" or "tape 2" TAPE MONITOR indicator lights up.
5. Insert a recorded tape in the tape deck and set the tape deck in the playback mode.
6. Advance the VOLUME control knob to a comfortable level and adjust the BASS and TREBLE control knobs as desired.
7. Activate the BALANCE control knob, MODE selector, BASS CONTOUR, or HIGH CUT filter switch if necessary.

Tape Dubbing

Two tape decks can be connected to this unit and dubbing can be done from the tape deck connected to the TAPE 1 jacks to the tape deck connected to the TAPE 2 jacks.

1. Turn the VOLUME control knob to the minimum level and press the POWER switch. The POWER indicator lights up.
2. Press the SPEAKERS 1 switch or/and SPEAKERS 2 switch for the desired speaker system(s).
3. Depress the TAPE COPY switch (button in).
4. Set the MODE selector to the "stereo" or "mono" position according to the program source.
5. After setting the tape deck connected to the TAPE 1 jacks for playback and the tape deck connected to the TAPE 2 jacks for recording, dubbing will begin.
6. To monitor the sound being played, set the TAPE MONITOR selector to the "tape 1" position. To monitor the sound being recorded, set the TAPE MONITOR selector to the "tape 2" position.

Another program source (phono, tuner, video/CD) can be listened to during dubbing, with no effect on the dubbing quality.

1. Set the TAPE MONITOR selector to the "source" position.
2. Select the desired program source with the FUNCTION selector.

TROUBLESHOOTING CHECKLIST

Most of the problems consumers have with their high fidelity system are due to incorrect operation. If this unit does not operate as you intended, first check the items in the following checklist. Also check other related components such as the tuner, turntable, speakers and other electrical equipment you use with this amplifier.

Problem	Cause	Remedy
The POWER indicator does not light up when the POWER switch is pressed.	•The power cord is not plugged in.	•Plug in the power cord securely.
The POWER indicator lights up, but no sound is heard.	•The TAPE MONITOR selector is in the "tape 1" or "tape 2" position. •The FUNCTION selection was not made properly. •The SPEAKERS 1 and 2 switches are set to the OFF position. •The speaker wires are disconnected or broken.	•Set the TAPE MONITOR selector to the "source" position. •Set the FUNCTION selector to the proper position for the desired program source. •Press the SPEAKERS 1 or 2 switch. •Check the speaker wires and connect them correctly.
Sound is not heard from the speaker system on one side.	•The connection of a speaker wires are incorrect or incomplete. •The connection wires to other equipment are disconnected. •The BALANCE control knob is turned to either the extreme right or the left position.	•Check the speaker wires for disconnection or breaking and reconnect them correctly. •Check the wires for disconnection and connect them correctly. •Set the mark on the BALANCE control knob to the centre position.
When listening to stereo sound, the left and right sounds are reversed.	•The left and right speaker wires are reversed. •The left and right wires connected to other equipment are reversed. •The MODE selector is set to the "reverse" position.	•Check the speaker wires and connect them correctly. •Check the wires to other equipment and connect them correctly. •Set the MODE selector to the "stereo" position.
When playing to a turntable, a low-pitched noise ("hum" or "buzz") is heard.	•The ground wire of the turntable is disconnected. •The connections of the turntable wires are incorrect or incomplete.	•Make the ground wire connection correctly. •Insert the turntable wires into the PHONO INPUT jacks of this unit securely.
When increasing the volume level while playing a turntable, an undesireble prolonged sound (howling) is heard.	•"Howling" is created by the speakers and turntable. •Too much low frequency sound is present.	•Place the speakers further away from the turntable. •Place the turntable on a more solid surface. •Decrease the setting of the BASS control knob and/or turn off the BASS CONTOUR switch. •Turn on the SUBSONIC filter switch.
Sound quality is poor.	•Input components have not been set up correctly. •Tone control is not proper.	•Check the antenna of the tuner, cartridge of the turntable, or head of the tape deck, etc. and make corrections as needed. •Adjust the BASS and/or TREBLE control knobs to obtain a desired tone.

English

SPECIFICATIONS

Nous vous félicitons d'avoir choisi l'Amplificateur Intégré Stéréo Harman Kardon PM645.

Afin d'obtenir de cet appareil sophistiqué un rendement optimal, veuillez lire ce mode d'emploi attentivement et utiliser votre amplificateur conformément aux directives. Conservez soigneusement le mode d'emploi pour toute référence ultérieure.

Puissance de sortie RMS (sur 8Ω par canal, 20Hz ~ 20kHz)	: 40W par canal (Distorsion harmonique totale inférieure à 0,09%)
(DIN, 4Ω, 1kHz)	: 70W par canal
Haute capacité en courant instantané (HCC)	: 35A
Bande passante (à 50% de la puissance sur 8Ω)	: 10Hz à 100kHz
Réponse en fréquence (+0, −3dB)	: 0,5Hz à 150kHz
Facteur d'amortissement	: Supérieur à 65
Rapport signal-bruit IHF-A WTD (référence: sortie 1W)	
Phono	: 80dB
Vidéo/CD, tuner, bande	: 81dB
Sensibilité/impédance d'entrée	
Phono	: 2,2mV/47kΩ et 125pF
Vidéo/CD, tuner, bande	: 135mV/22kΩ
Surcharge phono (MM)	: 130mV
Caractéristiques des commandes de tonalité	
Amplification/coupure (à 50Hz) des basses	: +10dB/−10dB
Amplification/coupure (à 10kHz) des aiguës	: +10dB/−10dB
Filtres	
Infrasons	: 15Hz, 6dB/octave
Hautes fréquences	: 6kHz, 6dB/octave
Contour de basses	
Amplification (à 50Hz)	: +10dB
Déphasage (300Hz ~ 20kHz)	: Inférieur à 5 degrés
Dimensions (L × H × P)	: 443 × 103 × 351 mm (17-1/2 × 4-1/16 × 13-7/8 po)
Poids	: 6,5 kg (14 livres 5 onces)
Alimentation	
Modèle courant	: Secteur 220/240V, 50/60Hz
Pour le Canada	: Secteur 120V, 60Hz
Consommation	
Modèle courant	: 160W
Pour le Canada	: 220W (270VA)

Toutes les spécifications et caractéristiques peuvent être modifiées sans préavis.

POUR LES CLIENTS CANADIENS

Il convient de bien tenir compte de ce qui suit étant donné que la prise secteur est une prise polarisée.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UNE RALLONGE. UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

Ce manuel se rapporte aux versions or pâle et noire du modèle PM645.